

## Cholera

Updated 11/05

Cholera is an infectious disease of the gastrointestinal tract caused by certain strains of the *Vibrio cholera* bacterium. It has a short incubation period, from less than one day to five days, and produces an enterotoxin that causes a copious, painless, watery diarrhea that can quickly lead to severe dehydration and death if treatment is not promptly given. The main enterotoxin, known as cholera toxin interacts with G proteins and cyclic AMP in the intestinal lining to open ion channels. As ions flow into the intestinal lumen, water flows from the osmotic pressure. About one million *vibrio cholera* bacteria must be ingested to cause cholera in normally healthy adults, although increased susceptibility may be observed in those with a weakened immune system, individuals with decreased gastric acidity, or those who are malnourished.

### Transmission

- Fecal-oral transmission between close contacts
- Ingestion of contaminated water and food
- Eating raw shellfish from contaminated brackish rivers and coastal waters

### Symptoms

- Diarrhea, abdominal cramps, nausea, vomiting
- Thirst, muscle cramps, weakness
- Severe metabolic acidosis with potassium depletion, anuria

### Treatment/Care

- Solution of oral re-hydration salts
- Patients who become severely dehydrated must be given intravenous fluids
- Appropriate antibiotics can reduce volume and duration of diarrhea and the period of vibrio excretion, but most cases are treated successfully with oral hydration therapy alone.

### Complications

- Circulatory collapse and shock
- Cyanosis
- Death, if left untreated

### Prevention

- Hygienic disposal of human feces
- Adequate supply of safe drinking water in communities and households
- Good food hygiene including cooking foods thoroughly and eating them while still hot.

The vibrio responsible for the seventh pandemic, now in progress, is known as *V. cholerae* 01, biotype E1 Tor. The current pandemic began in 1961 when the vibrio first

appeared as a cause of epidemic cholera in Celebes (Sulawesi), Indonesia. The disease then spread rapidly to other countries of eastern Asia and currently in Latin America. A few cases have occurred in the United States among persons who traveled to South America or ate contaminated food brought back by travelers. Illness due to non-toxigenic strains of *V. cholerae* occurs occasionally along the Florida Gulf Coast.

#### More Information

<http://vm.cfsan.fda.gov/~mow/chap7.html>

[http://www.cdc.gov/ncidod/diseases/submenus/sub\\_cholera.htm](http://www.cdc.gov/ncidod/diseases/submenus/sub_cholera.htm)

<http://www.who.int/mediacentre/factsheets/fs107/en/>